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WASHINGTON, DC 20005

EXAMINER
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CHOW, LIXI

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 02/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/806,107

Applicant(s)

AHN ET AL.

Examiner

Lixi Chow

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 10/256,244.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. Claims 1-20 are pending in this application.

***Double Patenting***

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1 and 4-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2 and 4-20 of copending Application No. 10/806,318. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications claim recording of recording pattern having multi-pulse and recording of erase pattern having multi-pulse. In claims 1 of the instant Application recites “a recording waveform generating unit which generates a recording waveform having an erase pattern containing a multi-pulse and a recording pattern containing another multi-pulse”; this limitation corresponds to “a recording waveform generating unit generating a recording waveform which includes a first multi-pulse having a plurality of first pulse to form the recording pattern in response to the first level of the input data and second multi-pulse having a plurality of second pulse to form the erase pattern in response to the second

level of input data”, as recited in claim 1 of Application No. 10/805,318. The apparatus as claimed in claim 1 of Application No. 10/806,318 would obviously include the pickup unit, because the apparatus is performing recording and/or erasing of patterns on the optical recording medium.

In regards to claim 4 of instant Application, the limitation “a recoding waveform generating unit which generates a recording waveform comprising the recording pattern, an erase pattern having a multi-pulse, and a cooling pulse concatenating the recording and erase patterns” is essentially the same as the limitation “recording waveform generating unit generating a recording waveform which comprises the recording pattern corresponding to the first level of the input data, the erase pattern having a multi-pulse corresponding to the second level of the input data, and a cooling pulse concatenating the recording and erase patterns” that is recited in claim 5 of Application No. 10/806,318. The apparatus as claimed in claim 5 of Application No. 10/806318 would obviously include the pickup unit, because the apparatus is performing recording and/or erasing of patterns on the optical recording medium. The pickup unit which records mark and/or space as recited in claim 4 of instant Application would correspond to the pickup unit recited in claim 4 of Application No. 10/806,318. Furthermore, the cooling pulse as recited in claim 4 corresponds to the cooling pulse claimed in claim 2 of Application No. 10/806318.

4. In regards to claims 5-20 of instant Application, the limitations presented in claims 5-20 are similar to the limitations presented in claims 2 and 6-20 of Application No. 10/806,318. Hence, those claims are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the copending Application No. 10/806,318.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 2 and 3 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 2, 4, and 5 of copending Application No. 10/806318 in view of Ichihara.

In regards to claim 2 of instant Application, claims 1 or 4 of Application No. 10/806318 do not disclose a channel modulation unit which channel modulates data; however, Ichihara discloses an optical recording apparatus comprising a channel modulation unit which generates data provided from an outside source, and output an NRZI data signal to the recording waveform generating unit (see Fig. 5, element 25; and Figs. 1A and 1B show the NRZI waveform and recording waveform, respectively).

It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to have channel modulation unit for modulating the data provided from the outside source in the apparatus disclosed in the Application No. 10/806318. One of ordinary skill in the art would have been motivated to modulate the data input from the outside source, because conversion of recording data into a predetermined row of code bit is processed by modulation unit (see Col. 10, lines 39-45). Hence, modulation unit would be needed in order to correctly record information on the optical recording medium.

In regards to claim 3 of instant Application, claims 1 or 4 of Application No. 10/806318 do not, but Ichihara discloses an apparatus for recording information on the optical recording medium, wherein the pickup unit comprises:

a motor which rotates the optical recording medium (see Fig. 5, element 12);

an optical head having a laser device which generates a laser beam to the optical recording medium or receives the laser beam reflected from the optical recording medium (Fig. 5, element 13);

a servo circuit which servo-controls the motor and the optical head (Fig. 5, element 24 and/or 22; and Col. 10, lines 25-38) ; and

a laser driving circuit which drives the laser device installed in the optical head (Fig. 5, element 25).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include the above components shown in Fig. 5 of Ichihara into the optical pickup unit disclosed by Application No. 10/806318. One of ordinary skill in the art would have been motivated to do this, because every component contained in the optical pickup, listed above, are crucial for carrying out recording and/or reproducing of information to and/or from an optical recording medium (see Col. 10, lines 25-64).

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Maeda et al. (US 5,144,601; hereafter Maeda).

Regarding claim 19:

Maeda discloses an apparatus (see Fig. 12) for recording data on an optical recording medium, comprising:

a recording waveform generating unit (see Fig. 12; the input signal is generated from the recording waveform generating unit) which generates a recording waveform having an erase pattern containing a multi-pulse and a recording pattern containing another multi-pulse, (see Figs. 3D and 3E; the length of the new recording mark requires multi-pulse recording pulse; the erase pattern is represented by E) a power level of a leading pulse of the erase pattern being a high level of the multi-pulse and a power level of a trailing pulse being a high level of the multi-pulse; and (see Figs. 3D and 3E; the first and last pulse of the multi-pulse erase pattern are at high level);

a pickup unit (see Fig. 12, all the elements shown in Fig. 12, except the disc, are contained in a pickup unit) which generates light to the optical recording medium according to the generated recording waveform so that a mark or a space is formed on the optical recording medium (see Fig. 3).

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-5, 9-14, 16-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara (US 6,396,792).

Regarding claim 1:

Ichihara discloses an apparatus for recording data on an optical recording medium (see Fig. 5), comprising:

a recording waveform generating unit which generates a recording waveform having an erase pattern containing a multi-pulse and a recording pattern containing another multi-pulse (see Figs. 1A and 1B) ; and

a pickup unit which generates light to the optical recording medium according to the generated recording waveform so that a mark or a space is formed on the optical recording medium (see Fig. 5 and Col. 3, lines 5-17).

Ichihara does not specifically show the power level of a leading pulse of the erase pattern being a low level of the multi-pulse and a power level of a trailing pulse of the erase pulse being a high level of the multi-pulse. However, Ichihara does mention that the power levels for the erase pattern are not limited to those shown in the figure, i.e. Fig. 1B(see col. 6, lines 35-44). In addition, Ichihara suggests a plurality of power levels lower than the recording level ( $P_a$ ) are acceptable for setting the erase power level (see col. 6, lines 58-61). Hence, Examiner maintains that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (see MPEP § 2144.05(II)(A)).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have set the power level of the leading and trailing pulse of the multi-pulse erase pattern in various way as suggested by Ichihara. In particular, it would be obvious for a person with an ordinary skill to have modified the power level of a multi-pulse erase pattern, wherein the leading pulse is at low power level and the trailing pulse is at high power level. One would have been motivated to do this, because optimization of erase power level are different



among different type of discs and conditions (see Ichihara, col. 11, lines 16-25; one would have to consider the material of the recording layer and the optical property of the laser in order to determine the optimum erase power level); therefore, it would be necessary to provide erase pulses in various combination of ranges from routine experimentation, such that optimum power level of the erase pattern can be determined in order to ensure the entire area in the width direction of the recording track uniformly passes the temperature zone that promotes the generation of crystal nuclei (see col. 7, lines 1-5).

Regarding claim 2:

Ichihara discloses an apparatus as in claim 1, further comprising:

a channel modulation unit which channel modulates data provided from an outside source, and outputs an NRZI data signal to the recording waveform generating unit (see Fig. 5 and Col. 10, lines 39-45; element 26 corresponds to the channel modulation unit, and element 26 would obviously include the recording waveform generating unit since Figs. 1A and 1B show the NRZI signal are to be recorded on the optical recording medium).

Regarding claim 3:

Ichihara disclose an apparatus as in claim 1, wherein the pickup unit comprises:

a motor which rotates the optical recording medium (see Fig. 5, element 12);

an optical head having a laser device which generates a laser beam to the optical recording medium or receives the laser beam reflected from the optical recording medium (Fig. 5, element 13);

a servo circuit which servo-controls the motor and the optical head (Fig. 5, element 24 and/or 22; and Col. 10, lines 25-38); and

a laser driving circuit which drives the laser device installed in the optical head (Fig. 5, element 25).

Regarding claim 4:

Ichihara discloses an apparatus for recording data on an information storage medium (Fig. 5), comprising:

a recording waveform generating unit which generates a recording waveform comprising a recording patter, an erase pattern having a multi-pulse, and a cooling pulse concatenating the recording and erase pattern (see Figs. 1A-1B and Col. 11, lines 8-15; the modulation circuit 26 generates the waveform as shown in Fig. 1B; also see Col. 6, lines 35-45; the pulse between the recording pattern and the erase pattern corresponds to the cooling pattern, which concatenating the recording and the erasing patterns); and

a pickup unit which records with respect to the information storage medium according to the generated recording waveform so as to form a mark and/or a space on the information storage medium (see Col. 2, lines 53-65).

Ichihara does not specifically show the power level of a leading pulse of the erase pattern being a low level of the multi-pulse and a power level of a trailing pulse of the erase pulse being a high level of the multi-pulse. However, Ichihara does mention that the power levels for the erase pattern are not limited to those shown in the figure, i.e. Fig. 1B(see col. 6, lines 35-44). In addition, Ichihara suggests a plurality of power levels lower than the recording level ( $P_a$ ) are acceptable for setting the erase power level (see col. 6, lines 58-61). Hence, Examiner maintains that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (see MPEP § 2144.05(II)(A)).

The motivational statement for this claim is the same as the one the provided in claim 1. Hence, refer to claim 1 for the statement indicating the obviousness of modifying the teaching of Ichihara.

Regarding claim 5:

Ichihara further discloses the recording waveform generating unit generates a further multi-pulse of another recording pattern, and a cooling pulse as a portion of the multi-pulse of the erase pattern and another portion of the further multi-pulse of the another recording pattern (see Fig. 1B and col. 5, lines 54-61, the pulse between recording pulse and erase pulse corresponds to the cooling pulse).

Regarding claim 9:

Ichihara further discloses a waveform comprises another recording pattern formed of another multi-pulse (it is inherent that the waveform generating unit of Ichihara is capable of generating another multi-pulse), and the recording waveform generating unit adjusts a first one of the multi-pulses of the another recording pattern to have a power that is equal to a power of a first one of the multi-pulses of the erase pattern (see col. 6, lines 52-57; Ichihara specifies that if the pulse width of the Pc1 is very short, then the power level of Pc1 may be equal to the power level of the Pa, which is the first one of the multi-pulse of the recording pattern).

Regarding claim 10:

Ichihara further discloses a waveform comprises another recording pattern formed of another multi-pulse (it is inherent that the waveform generating unit of Ichihara is capable of generating another multi-pulse), and the recording waveform generating unit adjusts a first one of the multi-pulses of the another recording pattern to have a power that is other than a power of

a first one of the multi-pulses of the erase pattern (see Fig. 1B, power level  $P_a$  is different from the power level of a first one of the multi-pulses of the erase pattern).

Regarding claims 11 and 12:

Claims 11 and 12 recite similar limitations as claims 9 and 10, respectively. Hence, claims 11 and 12 are rejected under the same reasons set forth in claims 9 and 10.

Regarding claim 13:

Ichihara further discloses the multi-pulse of the erase pattern has a first pulse power and a second pulse power greater than the first pulse power (see Fig. 1B, the first pulse power is  $P_{c2}$ , and the second pulse power is  $P_{c1}$ ). However, Ichihara does not specifically disclose the power of the first one of the multi-pulses of the erase pattern is equal to the first pulse power. On the other hand, Ichihara does mention the power levels for the erase pattern are not limited those shown in the figure (see col. 6, lines 35-44). In addition, Ichihara suggests a plurality of power levels lower than the recording level ( $P_a$ ) are acceptable for setting the erase power level (see col. 6, lines 58-61). This suggests that the power level of the leading pulse of the multi-pulse erase pattern can be equal to the first pulse power which is lower than the second pulse power.

The motivational statement for this claim is the same as the one provided in claim 1. Hence, refer to claim 1 for the statement indicating the obviousness of modifying the teaching of Ichihara.

Regarding to claim 14:

Ichihara further discloses the multi-pulse of the erase pattern has a first pulse power and a second pulse power greater than the first pulse power (see Fig. 1B, the first pulse power is the  $P_{c2}$  and second pulse power is  $P_{c1}$ ), and the power of the first one of the another multi-pulses of

the recording pattern is equal to the first pulse power (the power level of the recording pattern to record the first mark is equal to the first pulse power  $P_{c2}$ ).

Regarding claims 16-18:

Ichihara further discloses the cooling pulse concatenating and included in the recording and erasing patterns and having a cooling power less than the power of the last pulse of the another multi-pulse of the recording pattern and a power of the first pulse of the multi-pulse of the erase pattern and/or cooling power less than a recording power of the recording pattern and a power of a first pulse of the multi-pulse of the erase pattern (see Fig. 1B; the cooling pulse is the pulse in between the forming of a mark and space; the cooling power is between  $P_{c1}$  and  $P_{c2}$ , the last pulse of the recording pattern is at  $P_a$  and the first pulse of the erase pattern is at  $P_{c1}$ ).

Regarding claim 20:

Claim 20 recites similar limitations as claim 1. Hence, the description of the similar limitations met by Ichihara is omitted here. In addition to claim 1, Ichihara also discloses the trailing pulse of the erase pattern is set to be a low level of the multi-pulse (see Fig. 1B and col. 6, line 62 to col. 7, line 5).

Ichihara does not specifically show the power level of a leading one of the erase pattern is also at a low level of the multi-pulse. However, Ichihara does mention that the power levels for the erase pattern are not limited to those shown in the figure, i.e. Fig. 1B(see col. 6, lines 35-44). In addition, Ichihara suggests a plurality of power levels lower than the recording level ( $P_a$ ) are acceptable for setting the erase power level (see col. 6, lines 58-61). This suggests that the power level of the leading pulse of the multi-pulse erase pattern can be at a low power level and the power level of the trailing pulse of the multi-pulse erase pattern can be at a high power level.

The motivational statement for this claim is the same as the one the provided in claim 1. Hence, refer to claim 1 for the statement indicating the obviousness of modifying the teaching of Ichihara.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara in view of Ushiyama et al. (US Pub. No. 2002/0176338; hereafter Ushiyama). For a description of Ichihara, see rejection of paragraph 9 above.

Regarding claim 6:

Ichihara does not, but Ushiyama disclose an apparatus for generating a recording waveform, wherein the pulse of the recording pattern is adjusted according to a pulse of the multi-pulse of the erase pattern (see Ushiyama, paragraph [0049]; the optimized pulse value changes based on the property of the space portion located in the front of the recording pattern).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the generating unit disclosed by Ichihara so that it is being adjusted according to the property of a pulse of the erase pattern as taught by Ushiyama. One of ordinary skill in the art would have been motivated to do this, because the optimum pulse value changes according to the property of the space portion located in front of the recording pattern (see Ushiyama, paragraph [0049]). Essentially, the property of the last one of the pulses of the pattern is crucial in determining the optimum pulse value of the first pulse of the recording pattern.

11. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara in view Clark et al. (US 5,802,031; hereafter Clark). For a description of Ichihara, see rejection of paragraph 9, above.

Regarding claim 7:

Claim 7 recites similar limitations as claim 1. Hence, the description of the similar limitations met by Ichihara is omitted here. In addition to claim 1, Ichihara also discloses a pickup forming a mark or a space by using the generated recording and erasing waveforms (see Fig. 5, element 13).

Although Ichihara disclose the recording waveform generating unit which receives the input data modulated according to a Run Length Limited (RLL) (2, 10); however, Ichihara does not disclose the input data being modulated according to a Run Length Limited (RLL) (1,7). On the other hand, Clark discloses the recording of data using the waveform modulated according to a Run Length Limited (RLL) (1,7) (see Clark, col. 6, lines 51-59).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have adopted the method of recording data according to a Run Length Limited (RLL) (1,7) in the recording waveform generating unit of Ichihara as taught by Clark. One of ordinary skill in the art would have been motivated to do this, because recording of marks and spaces of length 2T to 8T for standard M-O recording system is possible (see Clark, col. 6, lines 51-59). Hence, recording of marks or spaces amongst different type of recording format can be achieved.

Regarding claim 8:

Claim 8 recites similar limitation as claim 7. Therefore, it is rejected under the same reason set forth in claim 7.

12. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara in view of Tanaka et al. (US 5,825,742; hereafter Tanaka). For a description of Ichihara, see the rejection of paragraph 9, above.

Regarding claim 15:

Ichihara does not disclose a multi-pulse of the another recording pattern comprising a recording pulse having a recording power greater than the power of the first one of the pulses of the recording pattern. However, Tanaka discloses a multi-pulses recording pattern comprising a recording pulse having a power greater than the power of the first one of the pulses of the recording pattern (see Tanaka, Fig. 8, Pw2 is greater than the first pulse of the multi-pulses recording pattern).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to have adopted the method taught by Tanaka for recording information having a recording power higher than the power of the first one of the pulses of the multi-pulses recording pattern in the medium provided by Ichihara. One would be motivated to do this, so edge shift and jitter of the recording mark can be suppressed (see Tanaka, col. 4, lines 1-22).

#### ***Response to Arguments***

13. Applicant's arguments filed 11/28/05 have been fully considered but they are not persuasive.

I. Applicant argues Ichihara does not discloses or suggest, “power level of a leading pulse of the erase pattern being a low level of the multi-pulse and a power level of a trailing pulse of the erase pulse being a high level of the multi-pulse”. However, Examiner respectfully disagrees. Although Ichihara does not specifically illustrate in the figures showing the leading pulse of the multi-pulse is at the low power level and a trailing pulse of the multi-pulse is at the high power level. Nevertheless, Ichihara does suggest that plurality of other power levels other than the Pc1 and Pc2 are acceptable for setting as erase power levels (see col. 6, lines 35-61). Given with such suggestion, it would be obvious for a person of ordinary skill in the art to obtain various combination of power level for the leading pulse and the trailing pulses of the multi-



pulse erase pattern, thereby capable of determining the optimum erase pattern level for plurality of discs having different recording conditions. Since Ichihara shows the recording and erasing of information that would improve the overwrite erasability of the optical recording medium, one would be motivated to try the different combination of the erase power in order to achieve that goal. Furthermore, Examiner maintains that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (see MPEP § 2144.05(II)(A)). Accordingly, claim 1 and other independent claims having similar limitations are not patentable over Ichihara.

II. Argument in regards to claim 4 is also not persuasive for the similar reasons set forth above.

III. Applicant's arguments with respect to claims 7-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lixi Chow whose telephone number is 571-272-7571. The examiner can normally be reached on Mon-Fri, 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. L. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LC 2/8/06

  
ANDREA WELLINGTON  
SUPERVISORY PATENT EXAMINER